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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/589,284

06/20/2008

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2006_I210A

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EXAMINER

SKROUPA, JOSHUA A

ART UNIT

PAPER NUMBER

3679

NOTIFICATION DATE

DELIVERY MODE

10/24/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|--------------------------------------|----------------------------------------|--|
| Office Action Summary | Application No. 10/589,284 | Applicant(s) ISHIJIMA ET AL. | |
| | Examiner Josh Skroupa | Art Unit 3679 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,2,4 and 7 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 1,2 and 7 is/are allowed.
- 7) ☒ Claim(s) 4 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 26 September 2011 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities:
 - a. On line 6, "a" should be deleted.
 - b. On line 12, the space between "wedge" and "-shaped" should be deleted.
 - c. On line 17, the period, ".", between "by" and "F/PCR" should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 4** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 4 recites the limitation, "the number of torque transmission balls is equal to or less than six". However, claim 1 discloses, at line 6, the constant velocity universal joint comprises six balls. It is unclear how the joint can have both six balls, while also having less than six balls.

Allowable Subject Matter

4. Claims 1, 2 and 7 are allowed.
5. The following is an examiner's statement of reasons for allowance:
 - a. **Regarding claim 1**, US 2003/0083135 (hereinafter Yamazaki) discloses, a constant velocity joint, in Figure 1, comprising an outer member (1) which is provided with a spherical inner surface (1b) in which six track grooves (1a) are formed and an inner member (2) which is provided with a spherical outer surface (2b) in which six track grooves (2a) are formed. Six balls (3) are disposed in respective wedge-shaped ball tracks formed by the track grooves of the outer member and the track grooves of the inner member. A retainer (4) is disposed between the spherical inner surface of the outer member and the spherical outer surface of the inner member to hold the balls. An elastic member (12) applies an elastic force in an axial direction between the inner member and the retainer to press the balls toward a narrower side of the wedge-shaped ball tracks.

Yamazaki does not expressly disclose a ratio $r1 (= PCD_{BALL}/D_{BALL})$ of a pitch circle diameter (PCD_{BALL}) of the ball to a diameter (D_{BALL}) of the ball being in a range of $1.5 \leq r1 \leq 4.0$. Yamazaki also does not expressly disclose a ratio $R1 (= F/PCR)$ of an offset amount between the center of the track grooves of both the inner member and the outer member with respect to a center of the spherical inner surface and the spherical outer surface and PCR is a length of a segment connecting the center of the inner track grooves with the outer track grooves and the center of the ball being in a range of $0.109 \leq R1 \leq 0.162$.

US 6,120,382 (hereinafter Sone) discloses that an ordinary value of $R1 = F/PCR$ is 0.14 for a six-ball constant velocity joint (Column 7, Lines 36 & 37); thus teaching that a value within the range of $0.109 \leq R1 \leq 0.162$ is known to those of ordinary skill in the art; see MPEP § 2131.03(I). Sone discloses a range $r1 = PCD_{BALL}/D_{BALL}$ is in a range of $3.3 \leq r1 \leq 5.0$ (Column 2, Lines 6-9), which would overlap and thus would make obvious the range $1.5 \leq r1 \leq 4.0$ of the instant invention. However, Sone specifically teaches away from this range, $r1$, being used in a constant velocity universal joint comprising six torque transmitting balls in describing the range $3.3 \leq r1 \leq 5.0$ provides greater degrees of strength of the outer joint member, of load capacity and durability than a six-ball constant velocity universal joint (Column 2, Lines 40-44) and thus one of ordinary skill in the art would not be able to apply this range, $r1$, to the six-ball constant velocity universal joint of Yamazaki.

b. **Regarding claims 2 and 7**, the claims are allowable for the same reasons as set forth above at item 5(a) for depending upon an allowable independent claim.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Josh Skroupa whose telephone number is (571)270-3220. The examiner can normally be reached on Monday-Thursday, 5:30 AM - 3:00 PM (Alternate Fridays Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3679

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./
Examiner, Art Unit 3679

/Greg Binda/
Primary Examiner, Art Unit 3679